Application Number 10/037,144
Responsive to Office Action mailed July 22, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-38 (Cancelled)

Claim 39 (Currently Amended): An apparatus comprising:

a set of input ports to receive data packets;

a set of sink ports in communication with said set of input ports to receive and forward said data packets, ~~wherein each sink port in said set of sink ports is adapted to concurrently receive a plurality of data packets~~; and

a set of data rings in communication with said set of input ports and said set of sink ports, wherein one or more of the sink ports in said set of sink ports concurrently receives a plurality of data packets from two or more of the data rings.

Claim 40 (Previously Presented): The apparatus of claim 39, wherein each data packet in said plurality of data packets has a same destination address.

Claim 41 (Currently Amended): The apparatus of claim 39, wherein each sink port in said set of sink ports includes a storage buffer ~~adapted to~~ that concurrently ~~store~~ stores said plurality of data packets.

Claim 42 (Previously Presented): The apparatus of claim 41, wherein said set of data rings couples each sink port in said set of sink ports to each input port in said set of input ports.

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Claim 43 (Currently Amended): The apparatus of claim 39, wherein a first sink port in said set of sink ports ~~is adapted to receive~~ receives a first data packet in said plurality of data packets and a second data packet in said plurality of data packets, wherein:

a first input port in said set of input ports sources said first data packet, and

a second input port in said set of input ports sources at least a portion of said second data packet during a time when said first input port sources said first data packet.

Claim 44 (Currently Amended): The apparatus of claim 43, wherein said first sink port ~~is adapted to receive~~ receives said at least a portion of said second data packet during a time said first sink port receives said first data packet.

Claim 45 (Previously Presented): The apparatus of claim 44, wherein said set of data rings includes three rings.

Claim 46 (Previously Presented): The apparatus of claim 44, wherein each sink port in said set of sink ports snoops data packets on each data ring in said set of data rings.

Claim 47 (Previously Presented): The apparatus of claim 44, wherein said first sink port snoops data packets on each data ring in said set of data rings to determine whether said data packets are addressed to a destination supported by said first sink port.

Claim 48 (Previously Presented): The apparatus of claim 44, wherein a first set of input ports in said set of input ports is coupled to a first data ring in said set of data rings and a second set of input ports in said set of input ports is coupled to a second data ring in said set of data rings, wherein said first set of input ports includes said first input port and said second set of input ports includes said second input port.

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Claim 49 (Previously Presented): The apparatus of claim 44, wherein said first sink port snoops data packets on each data ring in said set of data rings and determines whether to accept said first data packet based on a set of criteria, wherein said set of criteria includes:

said first sink port having sufficient storage space for storing said first data packet,

said first sink port supporting a destination targeted by said first data packet, and

a total number of packets being received by said first sink port not exceeding a predetermined number of packets.

Claim 50 (Previously Presented): The apparatus of claim 44, wherein said first sink port includes:

a ring interface coupled to said set of data rings to receive data from data packets;

a storage buffer coupled to said ring interface to receive and store said data; and

an output port coupled to said storage buffer to receive said data from said storage buffer and transmit said data on a communications link.

Claim 51 (Previously Presented): The apparatus of claim 39, wherein said apparatus is a cross-bar switch.

Claim 52 (Currently Amended): An apparatus comprising:

a set of input ports to receive data packets; and

a set of sink ports in communication with said set of input ports to receive and forward said data packets, wherein:

a first sink port in said set of sink ports is adapted to snoop snoops data packets received by said set of input ports to determine whether said data packets are targeted to a destination supported by said first sink port,

said first sink port is adapted to receive receives a first data packet and a second data packet, and

said first sink port is adapted to receive receives a portion of said second data packet at a time when said first sink port receives said first data packet.

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Claim 53 (Previously Presented): The apparatus of claim 52, wherein said first data packet is targeted to a first destination and said second data packet is targeted to said first destination.

Claim 54 (Previously Presented): The apparatus of claim 52, wherein:

a first input port in said set of input ports sources said first data packet, and

a second input port in said set of input ports sources a portion of said second data packet at a time when said first input port sources said first data packet.

Claim 55 (Previously Presented): The apparatus of claim 52, further including a set of data rings in communication with said set of input ports and said set of sink ports.

Claim 56 (Currently Amended): The apparatus of claim 55, wherein said first sink port includes:

a ring interface coupled to said set of data rings to receive data from data packets;

a storage buffer coupled to said ring interface to receive and store said data, wherein said storage buffer is adapted to concurrently store stores said first data packet and said second data packet; and

an output port coupled to said storage buffer to receive said data from said storage buffer and transmit said data on a communications link.

Claim 57 (Previously Presented): The apparatus of claim 55, wherein said set of data rings couples each sink port in said set of sink ports to each input port in said set of input ports

Claim 58 (Previously Presented): The apparatus of claim 55, wherein each sink port in said set of sink ports snoops data packets on each data ring in said set of data rings.

Claim 59 (Previously Presented): The apparatus of claim 52, wherein said apparatus is a cross-bar switch.

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Claim 60 (Previously Presented): A method comprising the steps of:

(a) receiving a set of data packets;

(b) transferring said set of data packets to a set of data rings in communication with a set of sink ports;

(c) a sink port in said set of sink ports, determining whether to accept data packets in said set of data packets, based on a set of criteria; and

(d) said sink port, collecting data for data packets accepted by said sink port, wherein said step (d) includes the steps of:

(1) said sink port collecting data for a first data packet, and

(2) said sink port collecting data for a portion of a second data packet during a time period when said step (d)(1) is being performed.

Claim 61 (Previously Presented): The method of claim 60, wherein said first data packet and said second data packet are targeted to a first destination.

Claim 62 (Previously Presented): The method of claim 60, wherein said step (a) includes the steps of:

(1) receiving said first data packet; and

(2) receiving a portion of said second data packet during a time period when said step (a)(1) is being performed.

Claim 63 (Previously Presented): The method of claim 62, wherein said step (b) includes the steps of

(1) transferring said first data packet to a data ring in said set of data rings; and

(2) transferring a portion of said second data packet to a data ring in said set of data rings during a time period when said step (b)(1) is being performed.

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Claim 64 (Previously Presented): The method of claim 60, wherein said step (c) includes the steps of:

(1)   said sink port, determining whether a data packet includes a destination address supported by said sink port; and

(2)   said sink port, determining whether to accept said data packet based on additional criteria in said set of criteria, wherein said step (c)(2) includes the steps of:

(i)   determining whether said sink port is enabled to receive data packets;

(ii)   determining whether said sink port has sufficient resources to store said data packet;

(iii)   determining whether said sink port is currently receiving a maximum allowable number of packets; and

(iv)   determining whether said data packet has a number of bytes within a predetermined range.

Claim 65 (Previously Presented): The method of claim 60, further including the step of:

(e)   said sink port, issuing a rejection signal if said sink port determines not to accept said data packet in said step (c), wherein said rejection signal terminates further reception of said data packet by said sink port.

Claim 66 (Previously Presented): The method of claim 60, further including the step of:

(f)   said sink port transmitting said data packets collected in said step (d).

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Claim 67 (Previously Presented): A method comprising the steps of:

    (a)   receiving a set of data packets on a set of input ports, wherein said step (a) includes the steps of:

        (1)   receiving a first data packet, and

        (2)   receiving a second data packet;

    (b)   a sink port in a set of sink ports in communication with said set of input ports, determining whether to accept data packets in said set of data packets, based on a set of criteria; and

    (c)   said sink port, collecting data for data packets accepted by said sink port, wherein said step (c) includes the steps of:

        (1)   said sink port collecting data for said first data packet, and

        (2)   said sink port collecting data for a portion of said second data packet during a time period when said step (c)(1) is being performed.

Claim 68 (Previously Presented): The method of claim 67, wherein said first data packet and said second data packet are targeted to a first destination.

Claim 69 (Previously Presented): The method of claim 67, wherein a portion of said second data packet is received in said step (a)(2) during a time period when step (a)(1) is being performed.

Claim 70 (Previously Presented): The method of claim 67, further including the step of:

    (d)   transferring said set of data packets from said set of input ports to a set of data rings in communication with said set of input ports and said set of sink ports, wherein said step (d) includes the steps of:

        (1)   transferring said first data packet to a data ring in said set of data rings; and

        (2)   transferring a portion of said second data packet to a data ring in said set of data rings during a time period when said step (d)(1) is being performed.

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Claim 71 (Previously Presented): The method of claim 67, wherein said step (b) includes the step of:

(1)   said sink port, determining whether a data packet includes a destination address supported by said sink port; and

(2)   said sink port, determining whether to accept said data packet based on additional criteria in said set of criteria, wherein said step (b)(2) includes the steps of:

(i)   determining whether said sink port is enabled to receive data packets;

(ii)   determining whether said sink port has sufficient resources to store said data packet;

(iii)   determining whether said sink port is currently receiving a maximum allowable number of packets; and

(iv)   determining whether said data packet has a number of bytes within a predetermined range.

Claim 72 (Previously Presented): The method of claim 67, further including the step of:

(e)   said sink port, issuing a rejection signal if said sink port determines not to accept a data packet in said step (b), wherein said rejection signal terminates further reception of said data packet by said sink port.

Claim 73 (Previously Presented): The method of claim 67, further including the step of:

(f)   said sink port transmitting said data packets collected in said step (c).

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